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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,200	11/18/2003	Jurgen Heier	HEIER	6250

20151 7590 10/05/2004

HENRY M FEIEREISEN, LLC
350 FIFTH AVENUE
SUITE 4714
NEW YORK, NY 10118

EXAMINER

WALBERG, TERESA J

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,200

Applicant(s)

HEIER, JURGEN

Examiner

Teresa J. Walberg

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings presently in the application are clearly informal.

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings.

The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 6, 13, 15, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Moser (5,865,246).

Moser discloses (see Figs. 3 and 5) a heat exchanger and method of making the heat exchanger including a tube bottom made of pressure and temperature resistant plastic (118), a plurality of tubes (14) disposed in side by side relationship in the tube bottom and forming part of a distribution or collecting chamber, the tubes having tube ends which are provided with a circumferential securing member (rings 20) to inhibit extraction of the tubes, the tube bottom being formed by a casting and injection process.

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 7-10, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (5,865,244) in view of Lopez et al (6,295,980).

Moser, as discussed above, shows the structure and method claimed, but does not specify the type of plastic used or the tube bottom including reinforcements.

Lopez et al teach the use of fiber glass reinforcements in a plastic header of a heat exchanger and also teach the plastic being a synthetic resin. See col. 4, lines 38-41.

It would have been obvious in view of Lopez et al to use fiber glass reinforcements in the tube bottom of Moser to make the layer stronger and to use synthetic resin as the plastic because Lopez et al teach that it is a suitable plastic for this purpose.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (5,865,244) in view of Nakamura (4,967,836).

Moser, as discussed above, shows the structure and method claimed, but does not specify the material of the tubes.

Nakamura teaches using tubes made of metal, such as copper, with a synthetic resin tank. See col. 1, lines 26-34.

It would have been obvious in view of Nakamura to use tubes made of copper with the tube bottom of Moser to enable good heat transfer.

7. Claims 11, 12, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (5,865,244) in view of Rossi (2,839,276).

Moser, as discussed above, shows the structure and method claimed, but does not show securing the tubes by use of embossments or funnel shaped flared portions.

Rossi teaches securing tubes to a header by use of embossments or flared portions on the ends of the tubes.

It would have been obvious in view of Rossi to secure the tubes to the header of Moser by use of embossments or flared tube ends to better secure them in place.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (5,865,244) in view of Johnson (3,489,209).

Moser, as discussed above, shows the structure and method claimed, but does not teach making the tubes of plastic.

Johnson teaches making tubes of plastic, such as polypropylene (col. 4, line 39).

It would have been obvious in view of Johnson to use plastic tubes in the heat exchanger of Moser to reduce the weight of the heat exchanger.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (5,865,244) in view of Hugel (4,993,900) and Gibson (1,347,219).

Moser, as discussed above, shows the structure and method claimed, but does not teach providing an embedded metal sleeve in a peripheral flange.

Hugel teaches embedding metal sleeves in molded materials for screw fastening.

Gibson teaches using screws through an peripheral flange to fasten the header of a heat exchanger in place.

It would have been obvious in view of Hugel to provide embedded metal sleeves in the molded material of Moser to enable use of screws to hold the header in place, since Gibson teaches that it is desirable to use screws to hold the header of a heat exchanger in place to enable disassembly for repairs.

10. Claims 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moser (5,865,244) in view of Breault et al (6,050,331).

Moser, as discussed above, shows the structure and method claimed, but does not teach surface roughening of the tube ends.

Breault et al teach roughening a tube surface to improve adherence to an adjoining material.

It would have been obvious in view of Breault et al to provide a roughened upper surface for the tubes in the heat exchanger of Moser to provide improved adherence to the plastic tube bottom.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schardt et al, Jones, Smith et al, and Hiesterman are cited to show heat exchangers having plastic headers.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 703-308-1327. The examiner can normally be reached on M-F 9:00 - 5:30.

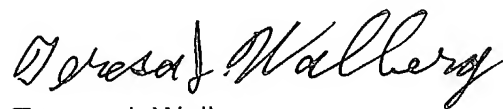
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in cursive script, reading "Teresa J. Walberg".

Teresa J. Walberg
Primary Examiner
Art Unit 3742

tjw